CLAIMS:

1. An isolation region forming method comprising:

forming openings through first and second masking layers over a substrate, the second masking layer being over the first masking layer;

after forming the openings, removing portions of the second masking layer while leaving some of the second masking layer remaining over the substrate; and

after removing portions of the second masking layer, forming an insulative material within the etch openings, the insulative material within the etch openings forming at least portions of isolation regions.

2. The method of claim 1 wherein the first masking layer comprises silicon dioxide and the second masking layer comprises silicon nitride.

3. The method of claim 1 wherein the substrate comprises silicon and the forming insulative material comprises:

thermally growing a first silicon dioxide layer from the substrate within the openings; and

depositing a second silicon dioxide layer within the openings and over the first silicon dioxide layer.

4. The method of claim 1 wherein the removing portions of the second masking layer reduces a thickness of the second masking layer without moving a lateral periphery of the second masking layer outward from the opening.

5. The method of claim 1 wherein the removing portions of the second masking layer moves a lateral periphery of the second masking layer outward from the opening without reducing a thickness of the second masking layer.

6. The method of claim 1 wherein the removing portions of the second masking layer moves a lateral periphery of the second masking layer outward from the opening and reduces a thickness of the second masking layer.

7. The method of claim 1 further comprising forming a patterned layer of photoresist over the second masking layer before forming the openings through the first and second masking layers, the forming the openings through the first and second masking layers comprising transferring a pattern from the patterned photoresist to the first and second masking layers, at least some of the photoresist remaining over the second masking layer during the removing portions of the second masking layer.

8. The method of claim 1 further comprising:

forming a patterned layer of photoresist over the second masking layer before forming the openings through the first and second masking layers, the forming the openings through the first and second masking layers comprising transferring a pattern from the patterned photoresist to the first and second masking layers; and

removing the photoresist from over the second masking layer prior to the removing portions of the second masking layer.

9. An isolation region forming method comprising:

forming openings through first masking and second masking layers and into a substrate underlying the first and second masking layers, the second masking layer being over the first masking layer;

removing portions of the second masking layer while leaving some of the second masking layer remaining over the substrate; and

after removing portions of the second masking layer, thermally oxidizing the substrate within the openings to form an oxide layer within the openings, the oxide layer within the openings forming at least portions of isolation regions.

10. The method of claim 9 wherein the first masking layer comprises silicon dioxide and the second masking layer comprises silicon nitride.

11. The method of claim 9 wherein the substrate comprises silicon and further comprising depositing a second silicon dioxide layer within the openings and over the thermally grown oxide layer.

12. The method of claim 9 wherein the removing portions of the second masking layer reduces a thickness of the second masking layer without moving a lateral periphery of the second masking layer outward from the opening.

13. The method of claim 9 wherein the removing portions of the second masking layer moves a lateral periphery of the second masking layer outward from the opening without reducing a thickness of the second masking layer.

14. The method of claim 9 wherein the removing portions of the second masking layer moves a lateral periphery of the second masking layer outward from the opening and reduces a thickness of the second masking layer.

15. The method of claim 9 further comprising forming a patterned layer of photoresist over the second masking layer before forming the openings through the first and second masking layers, the forming the openings through the first and second masking layers comprising transferring a pattern from the patterned photoresist to the first and second masking layers, at least some of the photoresist remaining over the second masking layer during the removing portions of the second masking layer.

16. The method of claim 9 further comprising:

forming a patterned layer of photoresist over the second masking layer before forming the openings through the first and second masking layers, the forming the openings through the first and second masking layers comprising transferring a pattern from the patterned photoresist to the first and second masking layers; and

removing the photoresist from over the second masking layer prior to the removing portions of the second masking layer.

17. An isolation region forming method comprising:

forming a first masking layer over a substrate;

forming a second masking layer over the first masking layer, the first and second masking layers having a pattern of openings extending therethrough to expose portions of the underlying substrate;

etching the exposed portions of the underlying substrate to form openings extending into the substrate;

after etching the exposed portions of the underlying substrate, removing portions of the second masking layer while leaving some of the second masking layer remaining over the substrate; and

after removing portions of the second masking layer, forming an insulative material within the openings in the substrate, the insulative material within the openings forming at least portions of isolation regions.

18. The method of claim 17 wherein the first masking layer comprises silicon dioxide and the second masking layer comprises silicon nitride.

19. The method of claim 17 wherein the second masking layer comprises lateral sidewalls along the openings extending through the second masking layer, and wherein the removing portions of the second masking layer displaces the lateral sidewalls away from the openings.

20. The method of claim 17 wherein the second masking layer comprises a thickness over the first masking layer, and wherein the removing portions of the second masking layer reduces the thickness of at least some of the remaining second masking layer.

21. The method of claim 17 wherein the second masking layer comprises a thickness over the first masking layer, and wherein the removing portions of the second masking layer reduces the thickness of an entirety of the remaining second masking layer.

22. The method of claim 17 wherein the removing portions of the second masking layer comprises facet etching the second masking layer.

23. The method of claim 17 further comprising:

after removing portions of the second masking layer, etching the substrate to extend the openings formed in the substrate further into the substrate.

24. An isolation region forming method comprising:

forming a masking layer over a substrate;

forming a pattern of openings extending through the masking layer and into the underlying substrate;

after forming the openings, facet etching the first masking layer; and

after the facet etching, forming insulative material within the openings extended into the substrate, the insulative material within the openings forming at least portions of isolation regions.

25. The method of claim 24 wherein the masking layer comprises silicon nitride.

26. The method of claim 24 wherein the substrate comprises silicon and the forming insulative material comprises:

thermally growing a first silicon dioxide layer from the substrate within the openings; and

depositing a second silicon dioxide layer within the openings and over the first silicon dioxide layer.

27. An isolation region forming method comprising:

forming a masking layer over a substrate;

forming a pattern of openings extending through the masking layer and into the underlying substrate, the first masking layer having edge regions proximate the openings and having a central region between the edge regions;

after extending the openings into the underlying substrate, reducing a thickness of the first layer at the edge regions to thin the edge regions relative to the central region; and

forming insulative material within the openings extended into the substrate, the insulative material within the openings forming at least portions of isolation regions.

28. The method of claim 27 wherein the masking layer comprises silicon nitride.

29. The method of claim 27 wherein the substrate comprises silicon and the forming insulative material comprises:

thermally growing a first silicon dioxide layer from the substrate within the openings; and

depositing a second silicon dioxide layer within the openings and over the first silicon dioxide layer.

30. The method of claim 27 further comprising forming a patterned photoresist layer over the masking layer, and wherein the forming openings comprises transferring a pattern from the patterned photoresist layer to the masking layer, the reducing the thickness of the silicon nitride layer at the edge regions comprising:

removing a portion of the photoresist overlying the masking layer edge regions while leaving another portion of the photoresist overlying the masking layer central region; and

after removing the portion of the photoresist, and while said other portion of the photoresist is over the masking layer central region, exposing the masking layer to etching conditions which reduce the thickness of the masking layer at the edge regions.

31. An isolation region forming method comprising:

forming a silicon nitride layer over a substrate, the silicon nitride layer having a pattern of openings extending therethrough to expose portions of the underlying substrate;

etching the exposed portions of the underlying substrate to form openings extending into the substrate;

after etching the exposed portions of the underlying substrate, wet etching the silicon nitride layer to remove portions the silicon nitride layer while leaving other portions of the silicon nitride layer over the substrate; and

after the wet etching, forming oxide within the openings in the substrate, the oxide within the openings forming at least portions of isolation regions.

32. The method of claim 31 further comprising:

forming a silicon oxide layer over the substrate; and

the forming the silicon nitride layer comprising forming the silicon nitride layer over the silicon oxide layer.

33. The method of claim 31 wherein said other portions of the silicon nitride layer have a thickness of at least about 600Å after the wet etching.

34. The method of claim 31 the wet etching comprises exposing the silicon nitride layer to phosphoric acid.

35. An isolation region forming method comprising:

forming a silicon nitride layer over a substrate;

forming a masking layer over the silicon nitride layer;

forming a pattern of openings extending through the masking layer to the silicon nitride layer;

extending the openings through the silicon nitride layer to the underlying substrate with a first etch, the silicon nitride layer comprising edge regions proximate the openings and having a central region between the edge regions;

extending the openings into the underlying substrate with a second etch, the second etch forming a polymer over the edge regions;

after extending the openings into the underlying substrate, exposing the silicon nitride layer and masking layer to dry etching conditions to remove the polymer from the edges of the silicon nitride layer and to remove portions of the masking layer while leaving other portions of the masking layer remaining over the silicon nitride layer;

after the dry etching, further extending the openings into the substrate; and

after the further extending, forming oxide within the openings in the substrate, the oxide within the openings forming at least portions of isolation regions.

36. The method of claim 35 wherein the second etch comprises different conditions than the first etch.

37. The method of claim 35 wherein the second etch comprises a dry plasma etch utilizing CF_4/HBr and the first etch comprises a dry plasma etch utilizing at least one of CF_4 and CH_2F_2.

38. The method of claim 35 further comprising:

forming a silicon oxide layer over the substrate; and

the forming the silicon nitride layer comprising forming the silicon nitride layer over the silicon oxide layer.

39. The method of claim 35 wherein the dry etching comprises exposing the silicon nitride layer and masking layer to an oxygen-containing gas.

40. The method of claim 35 wherein the masking layer comprises photoresist and the dry etching comprises exposing the silicon nitride layer and masking layer to an oxygen-containing gas.

41. The method of claim 35 wherein the dry etching comprises exposing the silicon nitride layer and masking layer to O_2.

42. An isolation region forming method comprising:

forming a silicon nitride layer over a substrate;

forming a masking layer over the silicon nitride layer;

forming a pattern of openings extending through the masking layer to the silicon nitride layer;

extending the openings through the silicon nitride layer to the underlying substrate, the silicon nitride layer having edge regions proximate the openings and having a central region between the edge regions;

extending the openings into the underlying substrate;

after extending the openings into the underlying substrate, reducing a thickness of the silicon nitride layer at the edge regions to thin the edge regions relative to the central region; and

forming oxide within the openings extended into the substrate, the oxide within the openings forming at least portions of isolation regions.

43. The method of claim 42 further comprising forming a silicon oxide layer over the substrate, the forming the silicon nitride layer comprising forming the silicon nitride layer over the silicon oxide layer.

44. The method of claim 42 wherein a thickness of the cental region is substantially unchanged as the thickness of the edge regions is reduced.

45. The method of claim 42 wherein the reducing the thickness of the silicon nitride layer at the edge regions comprises:

removing a portion of the masking layer overlying the silicon nitride layer edge regions while leaving another portion of the masking layer overlying the silicon nitride central region; and

after removing the portion of the masking layer, and while said other portion of the masking layer is over the silicon nitride central region, exposing the silicon nitride layer to etching conditions which reduce the thickness of the silicon nitride layer at the edge regions.

46. The method of claim 45 wherein the etching conditions anisotropically etch the silicon nitride layer.

47. The method of claim 42 wherein the reducing the thickness of the silicon nitride layer at the edge regions comprises:

removing the masking layer; and

facet etching the silicon nitride layer to form faceted edges at the edge regions.

48. The method of claim 42 further comprising:

forming a silicon oxide layer over the substrate;

the forming the silicon nitride layer comprising forming the silicon nitride layer over the silicon oxide layer;

after forming the silicon nitride layer and extending the openings into the underlying substrate, removing a portion of the silicon oxide layer underlying the silicon nitride layer edge regions to undercut the edge regions; and

the reducing the thickness of the silicon nitride layer at the edge regions comprising:

removing the masking layer; and

facet etching the silicon nitride layer to form faceted edges at the edge regions.